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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/355,637	08/02/1999	KLAUS-DIETER HAMMER	051009/0122	6739

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EXAMINER
HON, SOW FUN

ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 04/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

HG

Office Action Summary	Application N .	Applicant(s)	
	09/355,637	HAMMER ET AL.	
	Examiner	Art Unit	
	Sow-Fun Hon	1772	

-- The MAILING DATE f this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,15,16 and 18-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,15,16 and 18-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Withdrawn Rejections

1. The 35 U.S.C. 112,2nd paragraph rejection in Paper # 17 (mailed 11/05/02) of claim 16 has been withdrawn due to Applicant's affirmation of the validity of the broad interpretation of the term "post-hardened".

2. The 35 U.S.C. 102(e) and 103(a) rejections in Paper # 17 (mailed 11/05/02) have been withdrawn due to Applicant's amendment in Paper # 18 (filed 02/05/03).

New Rejections

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-5, 7, 10-12, 16, 18-19, 20, 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Metzger (US 5,681,517) in view of Andersen et al. (US 5,679,145).

Metzger has an edible biopolymer casein film in the form of a planar film or a film tube especially suited for use in edible sausage casings (abstract). Metzger teaches that the casein in the amount of 89 to 64 %(1000 g) is lubricated with carboxylic acid in the amount of 2 to 9 % (21 to 100 g), plasticized with glycerol in the amount of around 9 to 27 % (100 to 300 g based on 1000 g casein) (column 3, lines 1-20) and melted to give a thermoplastic mass, extruding the mass (plasticized in an extruder at 85 to 90 °C and vertically discharged through a ring die). The seamless film tube for casings is then post-hardened (treated with solution containing crosslinking agent (additional glycerol which is 1,2,3-propanetriol with three hydroxy functional

groups) and then crosslinked (cured). The film tube was stretched at a 1:1.01 stretch ratio (1/100 of its length) (column 5, lines 50-68).

Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).* In the instant case, although the additional glycerol which acted as a crosslinker was only added after the casein was plasticized, it is the examiner's position that some branching was caused by the initial amount of glycerol plasticizer during the melting and mixing step, with subsequent crosslinking by the additional amount of glycerol, such that the resultant final product is the same.

Metzger teaches that the thermoplastic method is molding the material in its thermoplastic state into a film by blowing, melting and stretching (column 1, lines 45-65).

Since Metzger teaches that the film can have any desired thickness depending on the intended use, giving an example of 100 to 300 μm (0.1 to 0.3mm) for film tubes (column 3, lines 30-35, column 5, lines 50-65), it is the examiner's position that the claimed range of 20 to 60 μm is a result of routine experimentation for the intended end-use.

Metzger fails to teach the inclusion of fibers in the biopolymer matrix.

Andersen et al. has molded and extruded articles having a starch matrix reinforced with fibers (abstract). Andersen et al. teaches that like the edible sheet counterparts, the starch matrix is too brittle and fragile (column 3, lines 55-65). Andersen et al. teaches that the addition of

fibers to the matrix improves the fracture energy and toughness of the article, in the amount of 2 to 80 % by weight. One fiber is woodpulp (softwood fibers) which has an average length of about 3.5 mm (column 13, lines 30-65). Cotton linter fiber with an average length of from 0.3 to 1 mm in the amount of 15-20 % by weight of the starch composition is also taught (column 46, lines 25-40). Woodpulp and cotton are edible in small doses.

Since Andersen et al. teaches that the addition of fibers to the matrix improves the fracture energy and toughness of the article, it would have been obvious to one of ordinary skill in the art to have added the edible fibers taught by Andersen et al. to the edible matrix of Metzger in order to obtain edible molded articles with improved fracture toughness.

5. Claims 1-10, 12-13, 15, 18-20, 23-27 are rejected under 35 U.S.C. 103(a) as being obvious over Hammer et al. (US 5,928,737).

The applied reference has two common inventors, Klaus-Dieter Hammer and Gerhard Grolig, with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For

applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Hammer et al. has sausage casings comprising thermoplastic starch, 0.5 to 20 % by weight of edible plasticizer which may be glycerol, diglycerol, or sorbitol, 5 to 30 % by weight of fiber reinforcement which may be cotton linters, 2 to 20 % by weight of crosslinker which may be dialdehyde, dicarboxylic acid, diisocynate, or diepoxide and 2 to 12 % by weight of lubricant which may be vegetable oil, lecithin, or sunflower seed oil (column 3, lines 1-68 and column 4, lines 1-35). The composition is melted to give a thermoplastic mass, extruded and then stretched or blown to give the edible shaped body (column 5, lines 1-68). Hammer et al. teaches a three-layer casing with the fiber-reinforced layer in the middle in that a coating is applied internally and externally to act as oxygen or water vapour barriers (column 4, lines 40-55).

Hammer et al. teaches that the wall thickness of the casing is around 90 μm (column 5, lines 1-68). It is the examiner's position that the claimed range of 20 to 60 μm is a result of routine experimentation for the intended end-use.

6. Claims 1-13, 16, 18-23, 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al. (WO 93/19125) in view of Andersen et al. (US 5,679,145) and Metzger (US 5,681,517).

Lim et al. has extruded and molded articles made out of biopolymers (a starch and protein-based) biodegradable thermoplastic composition. The composition comprises a

crosslinked mixture of a native or modified starch in intimate admixture with a protein. A crosslinking agent is used to bind the starch and protein together (column 2, lines 20-31) in the amount of 0.1 to 5.0 weight % (column 7, lines 8-10), and may be aldehydes, dialdehydes, epoxides (column 6, lines 30-38). The plasticizer in the composition is in the amount of about 0.2 to 20 weight %, and may be glycerol, sorbitol and cellose methyl ether (carboxymethylcellulose) (column 7, lines 18-34). The lubricant is in the amount of about 2 weight %, and may be diglyceride or vegetable oil (column 8, lines 1-14). The starch to protein ratio is about 95:5 to about 50:50 (column 5, lines 19-32). The protein may be derived from casein, gelatin, keratin and plants (column 6, lines 3-9). The composition can further include a coloring agent (pigment) (column 8, lines 34-37).

Lim et al. teaches that apart from being biodegradable, the compositions may be comprised entirely of components that are edible by a human or other mammal, and that these edible compositions would be useful for making a packaging article that may be consumed along with the package contents (column 13, lines 16-23). The articles are blown after being extruded (column 11, lines 15-35).

Lim, however, fails to teach the addition of fibers in the molded article.

Andersen et al. has molded and extruded articles having a starch matrix reinforced with fibers (abstract). Andersen et al. teaches that the addition of fibers to the starch improves the fracture energy and toughness of the article, in the amount of 2 to 80 % by weight. One fiber is woodpulp (softwood fibers) which has an average length of about 3.5 mm (column 13, lines 30-65). Cotton linter fiber with an average length of from 0.3 to 1 mm in the amount of 15-20 % by weight of the starch composition is also taught (column 46, lines 25-40).

Since Andersen et al. teaches that the addition of fibers to the starch improves the fracture energy and toughness of the article, it would have been obvious to one of ordinary skill in the art to have added the edible fibers taught by Andersen et al. to the starch composition of Lim in order to obtain edible molded articles with improved fracture toughness.

Lim also fails to teach the wall thickness of the film article.

Metzger has an edible casein film in the form of a planar film or a film tube especially suited for use in edible sausage casings (abstract). Since Metzger teaches that the film can have any desired thickness depending on the intended use, giving an example of 100 to 300 μm (0.1 to 0.3mm) for film tubes (column 3, lines 30-35, column 5, lines 50-65), it is the examiner's position that the claimed range of 20 to 60 μm is a result of routine experimentation for the intended end-use.

Metzger teaches that the film tube for casings is then post-hardened (treated with solution and then cured (crosslinked)) (column 5, lines 50-68).

Because Metzger teaches that the film can have any desired thickness depending on the intended use of the edible casings, and that the process of making the casing involves post-hardening, it would have been obvious to one of ordinary skill in the art to have used the teachings of Metzger in the invention of Lim in order to obtain an edible casing with the desired wall thickness and hardness for the intended end-use.

Response to Arguments

7. Applicant's arguments with respect to claims 1-13, 15-16, 18-27 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

SH
Sow-Fun Hon
04/09/03

HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772
4/4/03